

ROBERT E. BUSHNELL*†

JOSEPH G. SEEBER°
JOHN C. BROSKY°+*
DARREN R. CREW+*
MATTHEW J. LESTINA†*
SARYADVINDER S. SAHOTA†*
RICHARD H. STERN°

MICHAEL D. PARKER
DANIEL A. GESELOWITZ, Ph.D.
(REG. PATENT AGENTS)

† ADMITTED IN MARYLAND
° ADMITTED IN VIRGINIA
+ ADMITTED IN PENNSYLVANIA
‡ ADMITTED IN NEW YORK
* ADMITTED IN CONNECTICUT
* NOT ADMITTED IN D.C.

R. E. BUSHNELL

ATTORNEY AT LAW

1522 K STREET, N.W., SUITE 300
WASHINGTON, D.C. 20005-1202
UNITED STATES OF AMERICA

13 July 2000

INTELLECTUAL PROPERTY LAW

TELEPHONE (202) 408-9040
FACSIMILE (202) 289-7100
FACSIMILE (202) 628-3835
FACSIMILE (410) 747-0022

E-MAIL: REBUSHNELL@AOL.COM

- ☐ U.S. Postal Service
☐ Via Local Courier
☐ Via International Courier
☐ Via Facsimile No. _____
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The Assistant Commissioner of Patents
Washington, D.C. 20231

Attorney Docket No.: P56063

Sir:

Submitted herewith is the following patent application:

Inventor: YANG-YEON LEE

**Title: METHOD FOR INFORMING A TRANSMITTING PART OF ERROR
OCCURRENCE IN A RECEIVING PART OF A FACSIMILE**

Please find attached hereto an application for patent which includes: Specification and Abstract, Claims, and a certified copy of the foreign priority document identified below:

Verified Showing of Small Entity Status: NO

Drawings: Formal drawings, 4 sheets, Figures 1 through 5

Claim of priority under 35 U.S.C. §119: YES

REPUBLIC OF KOREA Application No. 99-29100 filed in Korea on 19 July 1999

Fee (see formula below): **CHECK IS ENCLOSED**

Basic Fee \$345/690.....\$690.00

Additional Fees:

Total number of claims in excess of 20: 0 times \$9/18.....\$0.00

Number of independent claims in excess of 3: 0 times \$39/78.....\$0.00

Multiple dependent claims \$130/260.....\$0.00

An Assignment is likewise enclosed: Recording Fee \$40.....\$40.00

Filing Non-English specification.....\$0.00

TOTAL FEES FOR THE ABOVE APPLICATION.....\$730.00

Inventor: YANG-YEON LEE

Title: **METHOD FOR INFORMING A TRANSMITTING PART OF ERROR
OCCURRENCE IN A RECEIVING PART OF A FACSIMILE**

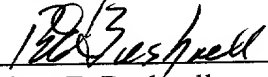
Should the enclosed check become lost or detached from the file, the Commissioner is authorized to charge for any additional charges incurred, or credit any excess payment to the Deposit Account No. 02-4943. Kindly notify the undersigned attorney of any transaction regarding our Deposit Account.

In view of the above, it is requested that this application be accorded a filing date pursuant to 37 CFR 1.53(b).

Please address all corresponding to :

Robert E. Bushnell
1522 K Street, N.W., Suite 300
Washington, D.C. 20005-1202

Respectfully submitted,


Robert E. Bushnell
(Registration No. 27,774)

1522 K Street, N.W., Suite 300
Washington, D.C. 20005-1202
Telephone: (202) 408-9040
Facsimile: (202) 628-0755

Folio: P56063
Date: 7/13/00
I.D.: REB/sys

TITLE

**METHOD FOR INFORMING A TRANSMITTING MODULE
OF ERROR OCCURRENCE IN A RECEIVING PART OF A FACSIMILE**

CLAIM FOR PRIORITY

This application makes reference to, incorporates herein and claims all rights accruing under 35 U.S.C. §119 from my earlier filing in the Korean Industrial Property Office of an application for a patent entitled *Method For Informing A Transmitting Part Of Error Occurrence In A Receiving Part Of A Facsimile* on the 19th day of July 1999, a copy of which is annexed hereto.

BACKGROUND OF THE INVENTION

Field of the Invention

This invention relates to a process for informing a transmitting facsimile machine of error occurrence in a receiving facsimile machine of a facsimile. More specifically, the present invention stores transmitting subscriber identification (TSI) information that is the telephone number of the transmitting facsimile machine, calls the telephone number in the event that a communication line is cut off due to error

occurrence in receiving facsimile data, and informs the transmitting facsimile machine of error information including the contents of the error occurring in the receiving facsimile machine and the telephone number of another receiving facsimile machine that is capable of serving for the first receiving facsimile machine.

Description of the Related Art

Generally, a facsimile includes a scanner for reading a document, a printer for outputting data in shape of letters, and a communication member such as a telephone cable for transmitting/receiving data to/from the other party in a wide area and the components are integrally formed to allow documents to be exchanged between two parties. In order to transmit and receive fax data using such a facsimile, protocols are exchanged between the transmitting facsimile machine (*i.e.*, a transmitter) and the receiving facsimile machine (*i.e.*, a receiver). In the event that an error within the receiving facsimile machine such as, by way of example, a paper jam, depletion of the paper empty, a toner low condition, a full memory and the like, while facsimile data is being transmitted from the transmitting facsimile machine to the receiving facsimile, the receiving facsimile can not receive further data. Accordingly, the receiving facsimile transmits a disconnect command (*i.e.*, a DCN signal) that

1 indicates the termination of communication, to the transmitting facsimile and cuts off
2 the communication line.

3 I have noticed that when the line of communication line is interrupted or
4 otherwise discontinued due to the occurrence of an error at the receiver, the
5 transmitter module tries to re-transmit the facsimile data. When the error in the
6 receiver continues, the call from the transmitter may not be completed within Phase A.
7 As a result, the transmitter does not know that the error has occurred in the receiver
8 and continuously tries to transmit fax data from the transmitting facsimile machine.
9 Moreover, I have found that the transmitter is unable to determine the type of error
10 occurring in the receiver, and in the event that the transmitter does not know the
11 number of another facsimile, the transmitter continuously redials the same number
12 until the call has been completed with the receiver.

13 SUMMARY OF THE INVENTION

14 It is therefore an object of the present invention to provide an improved
15 apparatus and process for facsimile telecommunication.

16 It is another object to provide to provide apparatus and process able to
17 compensate for errors that occur during the reception of facsimile

1 telecommunications.

2 It is still another object to provide a process for transmitting error information
3 including contents of error occurring in the receiving facsimile machine and the
4 telephone number of another facsimile which is capable of receiving fax data instead
5 of the error occurred receiving facsimile machine so that fax data can be continuously
6 transmitted even though the error occurs in the receiving facsimile machine while the
fax data is being transmitted.

These and other objects may be attained with a facsimile circuit and process
that informs the transmitting facsimile machine of error occurrence in a first receiving
facsimile machine of a facsimile, by inputting the telephone number of a second
facsimile for receiving fax data when an error occurs in the first receiving facsimile
machine while the first receiving facsimile machine receives the fax data; when a ring
13 signal is input from the transmitting facsimile machine of the fax data, forming a
14 communication line, exchanging protocols and storing the telephone number of the
15 transmitting facsimile machine that is TSI information among the protocols received
16 from the transmitting facsimile machine; printing the fax data received from the
17 transmitting facsimile machine and checking whether an error occurs or not at the
18 same time; if an error occurs, detecting an error message corresponding to the error

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1 by reference to the following detailed description when considered in conjunction
2 with the accompanying drawings in which like reference symbols indicate the same
3 or similar components, wherein:

4 Fig. 1 is a conceptional view illustrating a protocol for transmitting and
5 receiving facsimile telecommunications data;

6 Fig. 2 is a schematic block diagram of a facsimile telecommunications system
suitable for the practice of the present invention;

7 Fig. 3 is a flowchart illustrating the storage of error information when an error
8 occurs within the receiving facsimile machine;

9 Fig. 4 is a flowchart illustrating the transmission of error information stored
10 by the operation shown by Fig. 3, to the transmitting facsimile machine; and

11 Fig. 5 is an embodiment of a report received from the transmitting facsimile
12 machine in which the error information of the receiving facsimile machine is
13 included.
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15 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

16 Turning now to the drawings, Figure 1 is a conceptional view illustrating
17 protocol for transmitting and receiving fax data. Calls are placed during in Phase A.

1 The transmitting facsimile machine, while in an hook-off state, transmits a calling
2 tone (CNG) signal to the receiving facsimile machine by dialing until the receiving
3 facsimile machine responds. Upon reception of the CNG signal from the
4 transmitting facsimile machine, the receiving facsimile machine transmits a called
5 station identification (CED) signal, that is, a responsive signal, to the transmitting
6 facsimile machine.

7 In Phase B, states of terminals and transmitting lines are checked and the
8 terminals are controlled. At this time, the transmitting and receiving standby states
9 and the synchronizing state of the terminals are checked and the fax data is prepared
10 to be transmitted. More particularly, during Phase B, the receiving facsimile machine
11 transmits the CED signal to the transmitting facsimile machine and then transmits
12 non-standard facilities signals (NSF) used for recognizing specific user demand that
13 cannot be covered by T recommendation, called subscriber identification (CSI) used
14 for supplying a specific identifying member of a subscriber of the receiving facsimile
15 machine by means of an international telephone number, and a digital identification
16 signal (DIS) that specifies the standard CCITT capability of equipments of the
17 receiving facsimile machine to the transmitting facsimile machine.

18 The transmitting facsimile machine understands the state of the receiving

1 facsimile machine by receiving signals transmitted from the receiving facsimile
2 machine and then transmits non-standard facilities set-up (NSS) that is a digital
3 command responding to information included in the NSF signal, transmitting
4 subscriber identification (TSI) used for supplying a specific identifying member of
5 a subscriber of the transmitting facsimile machine by means of the international
6 telephone number, and a digital command signal (DCS) that is a digital setup
command responding to the standard capacity checked by the DIS signal.

When an environment for transmitting fax data is fixed as described above, the
transmitting facsimile machine finally determines fax data transmitting speed between
the transmitting facsimile machine and the receiving facsimile machine through a
training check (TCF) process and the receiving facsimile machine transmits
confirmation to receive (CFR) that is a responding signal for confirming start of
message transmission corresponding to TCF of the transmitting facsimile machine.

In Phase C, message transmission, message transmission check and
synchronization maintenance is performed.

In Phase D, message and reception is terminated. The transmitting facsimile
machine transmits end of procedure (EOP) showing completion of message
transmission, and the receiving facsimile machine transmits message confirmation

1 (MCF) showing that entire message is satisfactorily received to the transmitting
2 facsimile machine. As receiving the MCF from the receiving facsimile machine, the
3 transmitting facsimile machine transmits disconnect (DCN) that is a command
4 showing termination of communication and cuts off the communication line.

5 As described above, fax data transmission between the transmitting facsimile
6 machine and the receiving facsimile machine is performed through exchange of
7 protocols. However, in the event that an error such as paper jam, paper empty, toner
8 low, memory full and the like occurs in the receiving facsimile machine while fax
9 data is transmitted from the transmitting facsimile machine to the receiving facsimile
10 machine, the receiving facsimile machine cannot receive further data. Accordingly,
11 the receiving facsimile machine transmits the DCN to the transmitting facsimile
12 machine and cuts off the communication line.

13 When the communication line is cut off due to error occurrence in the receiving
14 facsimile machine, the transmitting facsimile machine tries to transmit fax data again.
15 However, in the case that the error occurring in the receiving facsimile machine is not
16 removed, call is not determined in Phase A. As a result, the transmitter does not
17 know the error occurrence in the receiving facsimile machine and continuously tries
18 to transmit fax data from the transmitting facsimile machine. Moreover, the

1 transmitter cannot check the sort of the error occurring in the receiving facsimile
2 machine and in the event that the transmitter does not know the number of another
3 facsimile, the transmitter needs to continuously dial the same number until the call
4 is formed with the receiving facsimile machine.

5 The present invention will now be described more fully hereinafter with
6 reference to the accompanying drawings. Like reference symbols in the drawings
7 indicate the same or similar components. Specification of components, such as
8 components of circuits are provided for description purpose. It is therefore apparent
9 to those skilled in this art that the present invention can be embodied without the
10 specified components. The detailed description might be omitted when it is
11 determined that related prior art or the detailed description of the structure may
12 unnecessarily make indistinct the point of the present invention.

13 Figure 2 is a schematic block diagram of a facsimile applied to the present
14 invention, Figure 3 is a flowchart of storing error information when an error occurs
15 in the receiving facsimile machine, Figure 4 is a flowchart of transmitting the error
16 information stored by the operation of Figure 3 to the transmitting facsimile machine;
17 and Figure 5 is an embodiment of a report received from the transmitting facsimile
18 machine in which the error information of the receiving facsimile machine is

1 included.

2 Referring to Figure 2, a controller 10 generally controls the system according
3 to a predetermined program. Particularly, the controller controls the system to
4 transmit the telephone number of a second facsimile which is stored in advance and
5 error information to the transmitting facsimile machine in the event that an error
6 occurs while the fax data is received.

7 Thus, the invention provides a facsimile transmitting apparatus that includes
8 a means (an informing means) for furnishing information to the apparatus concerning
9 error occurrence the structures that accomplish this function are described next. As
10 will appear, in a preferred embodiment of the invention, the informing means
11 comprises a means for furnishing the transmitting facsimile apparatus with
12 information concerning contents of an error (for example, "out of paper" error)
13 occurring at the receiving facsimile apparatus as well as a telephone number of a
14 second facsimile apparatus that is capable of receiving the facsimile message when
15 the first facsimile machine is inoperative, for example, out of paper.

16 A memory 20 includes an operation program for operating controller 10 and
17 a general control program, and stores data produced by program performance of
18 controller 10. Particularly, according to a preferred embodiment of the present

invention, the telephone number of the second facsimile is input by a user through an operational panel 40 in order to receive the fax data instead of the first facsimile, in the event that an error occurs while the first facsimile receives fax data. An error table including messages corresponding to various errors that may occur while the fax data is received is stored in memory 20. Furthermore, TSI information showing the telephone number of the transmitting facsimile machine among the signals received from the transmitting facsimile machine while the protocol is exchanged is stored in the memory in order to transmit the pre-stored telephone number of the second facsimile and the error information detected from the error table to the transmitting facsimile machine, in the event that an error occurs while the fax data is received.

The telephone number of the second facsimile stored in memory 20 and an error message corresponding to the error occurring while the fax data is received among the error messages stored in the error table are stored in an error buffer 30 according to the control of controller 10, in the event that an error occurs while fax data is received. Operational panel 40 includes a plurality of keys. Operational panel 40 supplies controller 10 with key data output when the keys are pressed and includes a displaying member for displaying the operating state of the system by means of display data of controller 10. A scanner 50 scans a document, converts the image of

the document into binary data, and supplies controller 10 with the binary data.

A modem 60 modulates and demodulates input and output signals of controller 10. A network control unit (NCU) 70 forms a communication line between a public switching telephone network (PSTN) and modem 60 according to control of controller 10. A printer 80 prints data received from external environment through modem 60 or data scanned in scanner 50 and stored in memory 20 according to control of controller 10. A sensor 90 inputs the state of the document and papers into controller 10 and a speaker 100 generates a warning sound corresponding to a control signal of controller 10.

The operation of the invention having the above-mentioned structure will be described in detail with reference to Figures 3 to 5. Figure 3 is a flowchart for storing error information to be transmitted to the transmitting facsimile machine in the event that an error occurs in the receiving facsimile machine. First, a user inputs the telephone number of the second facsimile through operational panel 40 to receive the fax data instead when fax data cannot be received due to error occurrence (S301). Controller 10 stores the telephone number of the second facsimile input by the user in memory 20 (S302). Thereafter, controller 10 checks whether a ring signal is input from external environment through the PSTN or not (S303). If the ring signal is

1 input, controller 10 forms a communication line and performs protocol exchanges
2 (S304).

3 Controller 10 exchanges protocols with the transmitting facsimile machine by
4 controlling modem 60 and NCU 70, detects the TSI information received from the
5 transmitting facsimile machine, i.e., the telephone number of the transmitting
6 facsimile machine in Phase B and stores the telephone number in memory 20 (S305).
Then, controller 10 receives data transmitted from the transmitting facsimile machine,
prints the data through printer 80 (S306) and checks whether the data is completely
received or not (S307).

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12 If it is checked that the data is completely received, the communication line
with the transmitting facsimile machine is cut off (S308). Otherwise, if it is checked
that the data is not completely received, it is checked whether an error occurs in the
13 facsimile or not (S309). If it is checked that an error does not occur in the facsimile,
14 step S309 is followed by step S306 to receive data from the transmitting facsimile
15 machine. Otherwise, if it is checked that an error occurs in the facsimile and it is
16 impossible to receive further fax data, controller 10 determines the sort of the error
17 occurring in the facsimile and detects an error message corresponding to the
18 determined error from the error table stored in memory 20 (S310).

1 The error table includes various error messages respectively corresponding to
2 the errors that may occur in the facsimile in look-up table style. The error table is
3 stored when the facsimile is manufactured. Controller 10 stores the telephone number
4 of the second facsimile input by the user at step S301 and the error message detected
5 at step S310 in error buffer 30 (S311). Step S311 is followed by step S308 of cutting
6 off the communication line with the transmitting facsimile machine. Now, the
process of transmitting the error information including the error message generated
in the receiving facsimile machine and the telephone number of the second facsimile
to the transmitting facsimile machine in the event that an error occurs in the receiving
facsimile machine while the fax data is transmitted will be described with reference
to Figure 4.

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12 Figure 4 is a flowchart for transmitting the error information stored in error
13 buffer 30 according to the operation of Figure 3 to the transmitting facsimile machine.
14 In the event that the communication line with the transmitting facsimile machine is
15 cut off due to the error occurrence in the facsimile of the receiving facsimile machine
16 while the fax data is received, controller 10 converts the error information stored in
17 error buffer 30, *i.e.*, the telephone number of the second facsimile and the error
18 message into bit-map data (S401). When the telephone number of the second

1 facsimile and the error message is completely converted into bit-map data, TSI
2 information (telephone number of the transmitting facsimile machine) detected at step
3 S305 of Figure 3 and stored in memory 20 is detected (S402) and the detected
4 telephone number is dialed (S403).

5 When a communication line with the transmitting facsimile machine is formed,
6 controller 10 transmits the bit-map data converted and stored in error buffer 30 at step
S401 (S405). Therefore, even though the communication line is cut off due to the
error occurrence in the receiving facsimile machine while the fax data is transmitted,
the transmitting facsimile machine can continuously transmit the transmission-
interrupted fax data according to the error information including the contents of the
error and the telephone number of the second facsimile which is capable of receiving
the fax data instead. In other words, the transmitting facsimile machine can easily
checks the state of the receiving facsimile machine by outputting the error
information transmitted from the receiving facsimile machine as shown in Figure 5.
Therefore, the transmitting facsimile machine can transmit fax data that is not
completely transmitted to the second receiving facsimile machine.

17 The several embodiments of this invention has been described above with
18 reference to the aforementioned embodiments. It is evident, however, that may

alternatives, modifications and variations will be apparent to those having skill in the art in light of the foregoing description. Accordingly, the present invention embraces all such alternatives, modifications and variations as fall within the spirit and scope of the appended claims and their equivalents.

The foregoing paragraphs describe a process and telecommunications circuit able to compensate for the unexpected occurrence of a malfunction within the receiving facsimile machine that prevents the prompt transmission of facsimile data from the transmitting facsimile machine to the malfunctioning receiving machines, by the expedient of storing the transmitting subscriber identification (TSI) information, that is, the telephone number of the transmitting facsimile machine, and having the receiving facsimile machine call that telephone number in the event that a communication line is cut off due to error occurrence in receiving facsimile data, and inform the transmitting facsimile machine of error information including the contents of the error occurring in the receiving facsimile machine and the telephone number of an alternate receiving facsimile machine that is capable of serving for the first receiving facsimile machine. According to the principles of the present invention, the receiving facsimile machine informs the transmitting facsimile machine of error occurrence in the receiving facsimile machine of the facsimile, the

1 transmitting facsimile machine is informed of error information including the
2 contents of the error occurring in the receiving facsimile machine and the telephone
3 number of the second receiving facsimile machine in the event that an error occurs
4 while fax data is received and that it is impossible to receive further fax data.
5 Therefore, the transmitting facsimile machine can continuously transmit the fax data
6 to the second receiving facsimile machine according to the second receiving facsimile
7 machine and contents of error report transmitted from the error-occurred receiving
8 facsimile machine. As a result, the present invention provides advantages of easy
9 check of the contents of the error occurring in the receiving facsimile machine and
10 rapid transmission of the fax data.

WHAT IS CLAIMED IS:

1 1. In a process for transmitting a facsimile message from a transmitting
2 facsimile machine to a receiving facsimile machine, a subprocess for informing the
3 transmitting facsimile machine of error occurrence at a first receiving facsimile
4 machine, said subprocess comprising the steps of:

5 (1) inputting a telephone number of a second receiving facsimile when an error
6 occurs at said first receiving facsimile machine while said first receiving facsimile
7 machine receives said facsimile message;

8 (2) when a ring signal is input from said transmitting facsimile machine,
9 forming a communication line, exchanging protocols of said transmitting facsimile
10 machine and of said first receiving facsimile machine and storing a telephone number
11 of said transmitting facsimile machine among said protocols received from the
12 transmitting facsimile machine;

13 (3) printing said fax data received from said transmitting facsimile machine and
14 simultaneously checking whether an error occurs;

15 (4) when an error occurs, detecting an error message corresponding to said
16 error from a pre-stored error table and storing said error message;

17 (5) when said communication line is cut off from said transmitting facsimile
18 machine due to said error occurrence, detecting said telephone number of said
19 transmitting facsimile machine and forming a communication line therewith; and

20 (6) when said communication line with said transmitting facsimile machine is
21 formed, transmitting error information occurring at said receiving facsimile machine.

2. The process of claim 1, wherein said error information includes at least said
telephone number of said second receiving facsimile machine and said error message.

3. The process of claim 2, wherein, before said communication line with said
transmitting facsimile machine is cut off, said telephone number of said second
receiving facsimile machine and said error message are stored in an error buffer.

4. The process of claim 1, further comprising the step of converting said error
information into bit map data when said telephone number of said transmitting
facsimile machine is detected and said communication line is formed.

5. The process of claim 1, wherein said error information of said facsimile

2 message is printed in said facsimile message.

1 6. The process of claim 1, wherein said error table is a look-up table including
2 error messages respectively corresponding to at least one error that may occur in said
3 facsimile message.

4 7. In a facsimile transmitting apparatus adapted for transmitting a facsimile
5 message to a first facsimile receiving machine, said facsimile transmitting apparatus
6 comprising:

7 a scanner for reading a document;

8 means for transmitting and receiving information;

9 means for exchanging protocols with said first facsimile receiving machine;

10 and

11 a printer;

12 *the improvement comprising:* an informing means for furnishing information
13 concerning error occurrence, to the facsimile transmitting apparatus.

1 8. The apparatus of claim 7, wherein the informing means comprises means

2 for furnishing the facsimile transmitting apparatus with information concerning
3 contents of an error occurring at the first facsimile receiving machine, and a telephone
4 number of a second facsimile receiving machine that is capable of receiving the
5 facsimile message in the event of error at the first facsimile receiving machine.

1 9. The apparatus of claim 8, wherein the informing means comprises:

2 means for inputting a telephone number of a second facsimile receiving
3 machine when an error occurs in said first facsimile receiving machine
4 while said first facsimile receiving machine receives said facsimile
5 message;

6 means for forming a communication line, means for exchanging protocols of
7 said facsimile transmitting apparatus and of said first facsimile receiving
8 machine, and means for storing a telephone number of said facsimile
9 transmitting machine among said protocols received from the facsimile
10 transmitting apparatus when a ring signal is input from said facsimile
11 transmitting apparatus;

12 means for printing said facsimile message received from said transmitting
13 facsimile apparatus and simultaneously checking whether an error

occurs or not;

means for detecting an error message corresponding to said error from a pre-stored error table, if an error occurs, and means for storing said error message;

means for detecting said telephone number of said facsimile transmitting apparatus and forming a communication line therewith, when said communication line is cut off from said facsimile transmitting apparatus due to said error occurrence; and

means for transmitting error information occurring in said facsimile message to said facsimile transmitting apparatus, when said communication line with said facsimile transmitting apparatus is formed.

10. The apparatus of claim 9, wherein the informing means comprises means for including said telephone number of said second facsimile receiving machine and said error message.

11. The apparatus of claim 9, wherein the informing means comprises means for storing in an error buffer said telephone number of said second facsimile receiving

3 machine and said error message, before said communication line with said facsimile
4 transmitting apparatus is cut off.

1 12. The apparatus of claim 9, wherein the informing means comprises means
2 for converting said error information into bit map data when said telephone number
3 of said facsimile transmitting apparatus is detected and said communication line is
4 formed.

1 13. The apparatus of claim 9, wherein the informing means comprises means
2 for printing in said facsimile message said error information of said facsimile
3 message.

1 14. The apparatus of claim 9, wherein the informing means comprises a look-
2 up table including error messages respectively corresponding to at least one error that
3 may occur in said facsimile message.

ABSTRACT

A process and apparatus for informing a transmitting facsimile machine of error occurrence in a first receiving facsimile machine, including the steps of: inputting the telephone number of a second facsimile machine; when a ring signal is input from the transmitting facsimile machine of the fax data, forming a communication line, exchanging protocols and storing the telephone number of the transmitting facsimile machine among the protocols, received from the transmitting facsimile machine; printing the fax data received from the transmitting facsimile machine and checking whether an error occurs or not at the same time; if an error occurs, detecting an error message corresponding to the error from a pre-stored error table and storing the error message; after the communication line is cut off from the transmitting facsimile machine due to the error occurrence, detecting the telephone number of the transmitting facsimile machine and forming a communication line; and when the communication line with the transmitting facsimile machine is formed, transmitting error information to the transmitting facsimile machine.

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sequenceDiagram
    participant T as Transmitting part
    participant R as Receiving part
    Note over T,R: PHASE A
    T->>R: DIALLING
    R->>R: CED
    Note over T,R: PHASE B
    R->>T: NSF, CSI, DIS
    R->>T: NSS, TSI, DCS
    Note over T,R: PHASE C
    T->>R: CFR
    T->>R: Data
    Note over T,R: PHASE D
    T->>R: EOP
    R->>T: MCF
    T->>R: DCN
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The diagram illustrates the sequence of messages in a telephone call setup and termination. It is divided into four phases:

- PHASE A:** The Transmitting part sends **DIALLING** to the Receiving part. The Receiving part then sends **CED** (Call Establishment Delay) back to the Transmitting part.
- PHASE B:** The Receiving part sends **NSF, CSI, DIS** (No Such Foreign, Call Setup In Progress, Discontinue) back to the Transmitting part. Then, the Receiving part sends **NSS, TSI, DCS** (No Such Subscriber, Transfer Setup In Progress, Disconnect) back to the Transmitting part.
- PHASE C:** The Transmitting part sends **CFR** (Call Forwarding) to the Receiving part. Then, the Transmitting part sends **Data** to the Receiving part.
- PHASE D:** The Transmitting part sends **EOP** (End of Page) to the Receiving part. Then, the Receiving part sends **MCF** (Message Call Forwarding) back to the Transmitting part. Finally, the Transmitting part sends **DCN** (Disconnect) to the Receiving part.

Fig. 1

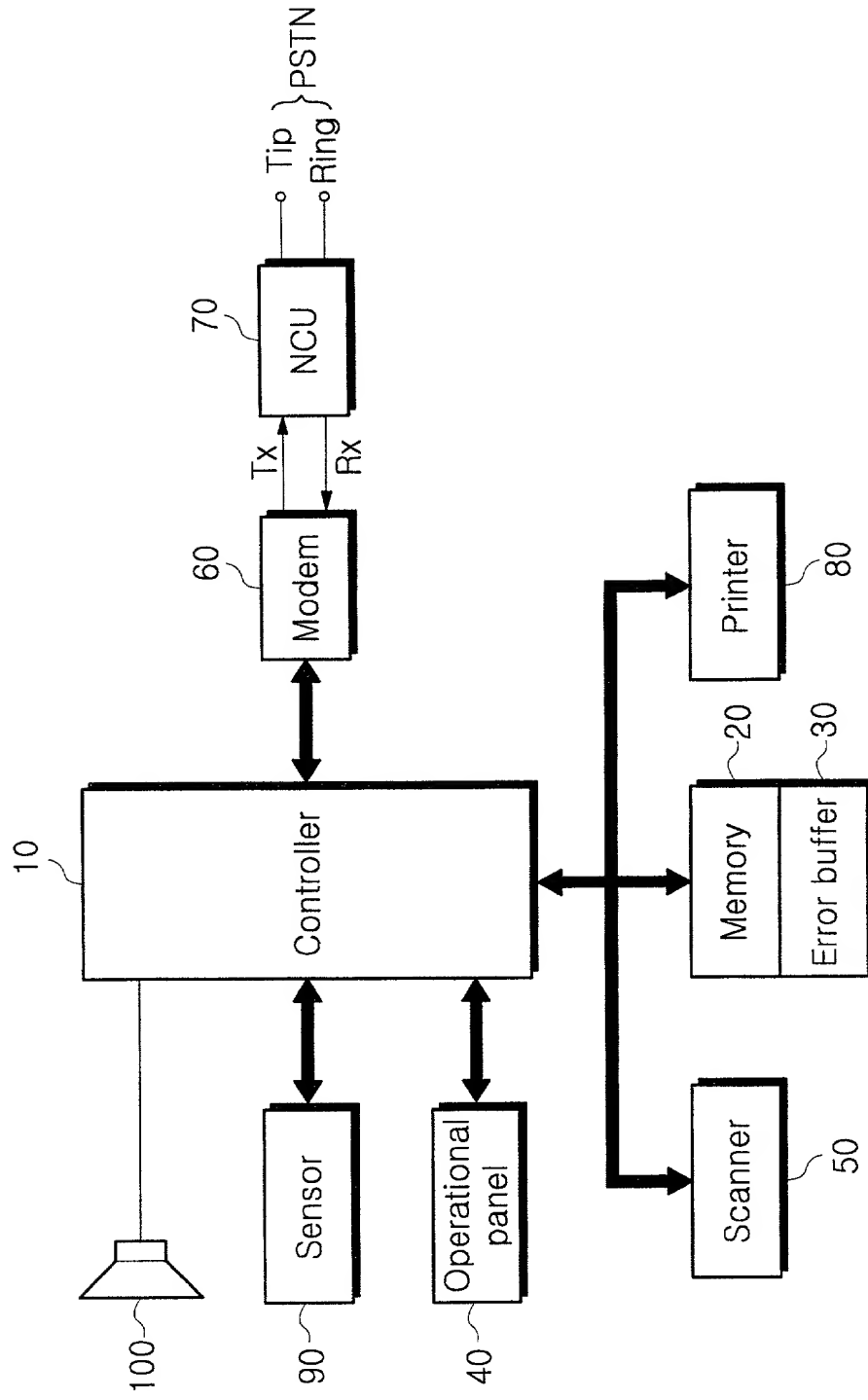


Fig. 2

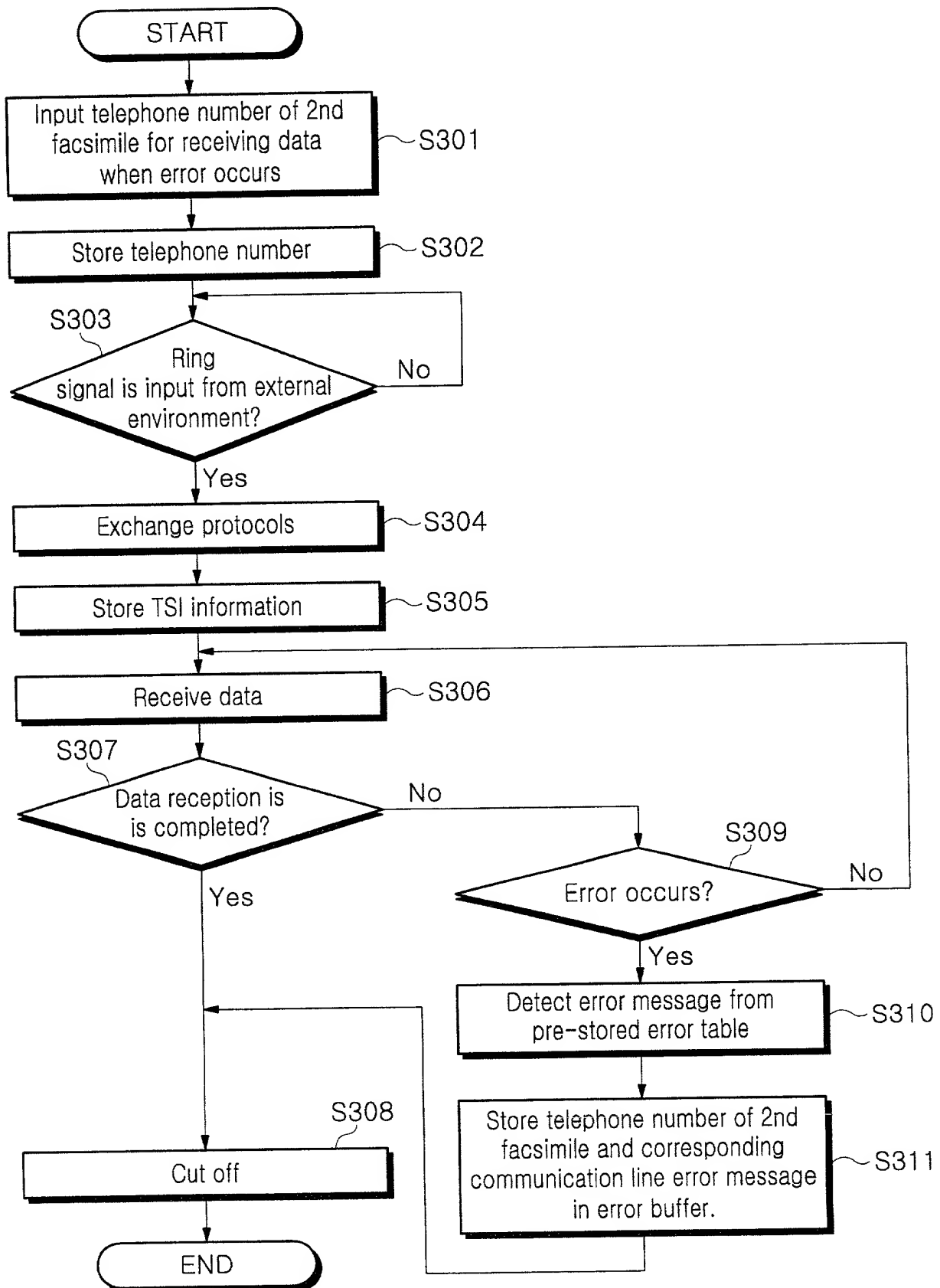


Fig. 3

02960-0290

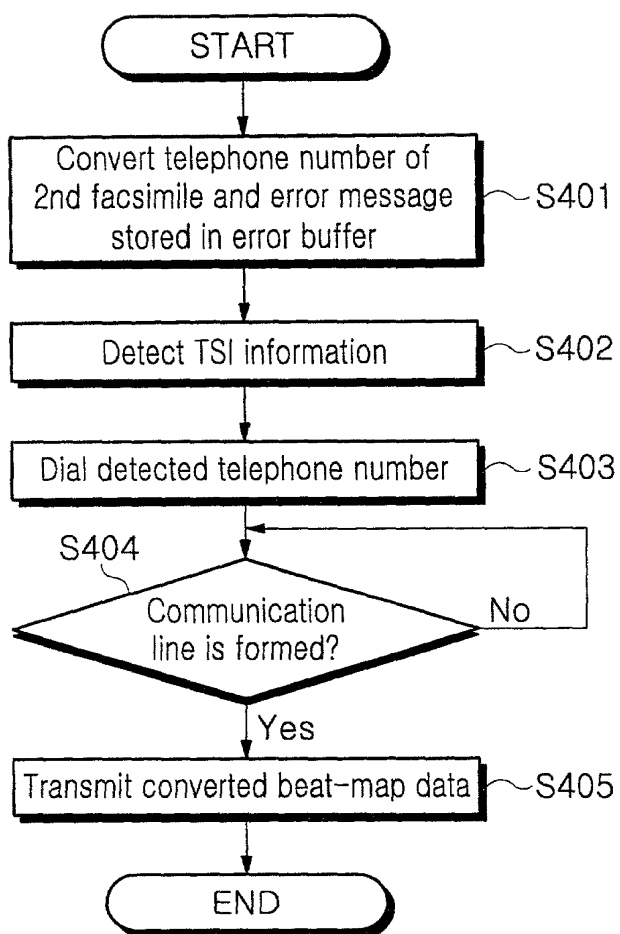


Fig. 4

2nd receiving part & Contents of error report

- DATE : 1999. 09. 09
- ERROR : RECEIVE MEMORY FULL
- 2nd receiving part : 0331-280-1744

Error occurs as described above thank you
for sending fax to 2nd receiving part

Fig. 5

1997-1998		1998-1999		1999-2000		2000-2001		2001-2002		2002-2003		2003-2004		2004-2005		2005-2006		2006-2007		2007-2008		2008-2009		2009-2010		2010-2011		2011-2012		2012-2013		2013-2014		2014-2015		2015-2016		2016-2017		2017-2018		2018-2019		2019-2020		2020-2021		2021-2022		2022-2023		2023-2024		2024-2025		2025-2026		2026-2027		2027-2028		2028-2029		2029-2030		2030-2031		2031-2032		2032-2033		2033-2034		2034-2035		2035-2036		2036-2037		2037-2038		2038-2039		2039-2040		2040-2041		2041-2042		2042-2043		2043-2044		2044-2045		2045-2046		2046-2047		2047-2048		2048-2049		2049-2050		2050-2051		2051-2052		2052-2053		2053-2054		2054-2055		2055-2056		2056-2057		2057-2058		2058-2059		2059-2060		2060-2061		2061-2062		2062-2063		2063-2064		2064-2065		2065-2066		2066-2067		2067-2068		2068-2069		2069-2070		2070-2071		2071-2072		2072-2073		2073-2074		2074-2075		2075-2076		2076-2077		2077-2078		2078-2079		2079-2080		2080-2081		2081-2082		2082-2083		2083-2084		2084-2085		2085-2086		2086-2087		2087-2088		2088-2089		2089-2090		2090-2091		2091-2092		2092-2093		2093-2094		2094-2095		2095-2096		2096-2097		2097-2098		2098-2099		2099-2100		2100-2101		2101-2102		2102-2103		2103-2104		2104-2105		2105-2106		2106-2107		2107-2108		2108-2109		2109-2110		2110-2111		2111-2112		2112-2113		2113-2114		2114-2115		2115-2116		2116-2117		2117-2118		2118-2119		2119-2120		2120-2121		2121-2122		2122-2123		2123-2124		2124-2125		2125-2126		2126-2127		2127-2128		2128-2129		2129-2130		2130-2131		2131-2132		2132-2133		2133-2134		2134-2135		2135-2136		2136-2137		2137-2138		2138-2139		2139-2140		2140-2141		2141-2142		2142-2143		2143-2144		2144-2145		2145-2146		2146-2147		2147-2148		2148-2149		2149-2150		2150-2151		2151-2152		2152-2153		2153-2154		2154-2155		2155-2156		2156-2157		2157-2158		2158-2159		2159-2160		2160-2161		2161-2162		2162-2163		2163-2164		2164-2165		2165-2166		2166-2167		2167-2168		2168-2169		2169-2170		2170-2171		2171-2172		2172-2173		2173-2174		2174-2175		2175-2176		2176-2177		2177-2178		2178-2179		2179-2180		2180-2181		2181-2182		2182-2183		2183-2184		2184-2185		2185-2186		2186-2187		2187-2188		2188-2189		2189-2190		2190-2191		2191-2192		2192-2193		2193-2194		2194-2195		2195-2196		2196-2197		2197-2198		2198-2199		2199-2200		2200-2201		2201-2202		2202-2203		2203-2204		2204-2205		2205-2206		2206-2207		2207-2208		2208-2209		2209-2210		2210-2211		2211-2212		2212-2213		2213-2214		2214-2215		2215-2216		2216-2217		2217-2218		2218-2219		2219-2220		2220-2221		2221-2222		2222-2223		2223-2224	
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YANG-YEON LEE

Examiner: *To Be Assigned*

Art Unit: *To Be Assigned*

For: METHOD FOR INFORMING A TRANSMITTING PART OF ERROR
OCCURRENCE IN A RECEIVING PART OF A FACSIMILE


TRANSMITTAL OF DECLARATION

The Assistant Commissioner
of Patents
Washington, D.C. 20231

Sir:

Accompanying this transmittal is a Declaration for the above-referenced application.

Respectfully submitted,


Robert E. Bushnell
Reg. No.: 27,774
Attorney for the Applicant

1522 "K" Street, N.W., Suite 300
Washington, D.C. 20005-1202
(202) 408-9040

Folio: P56063
Date: 7/13/00
I.D.: REB/sys

DECLARATION

AS A BELOW NAMED INVENTOR, I hereby declare that

My residence, post office address and citizenship are as stated next to my name

I believe that I am the original, first and sole (if only one name is listed below), or an original, first and joint inventor (if plural names are listed below), of the subject matter which is claimed and for which a patent is sought on the invention entitled

**TITLE: METHOD FOR INFORMING A TRANSMITTING PART OF ERROR OCCURRENCE
IN A RECEIVING PART OF A FACSIMILE**

the specification of which either is attached hereto or otherwise accompanies this Declaration, or:

☐ was filed in the U.S. Patent & Trademark Office on _____ and assigned Serial No. _____

☐ and (if applicable) was amended on _____

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to patentability and to the examination of this application in accordance with Title 37 of the Code of Federal Regulations • 1.56 I hereby claim foreign priority benefits under Title 35 U.S.C. Code • 119(a)-(d) or • 365(b) of any foreign application(s) for patent or inventor's certificate, or • 365(a) of any PCT International application which designated at least one country other than the United States, or • 119(e) of any United States provisional application(s), listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed

29100/1999	Republic of Korea	19/July/1999	Priority Claimed
(Application Number)	(Country)	(Day/Month/Year filed)	Yes[×] No[]

(Application Number)	(Country)	(Day/Month/Year filed)	Yes[] No[]
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I hereby claim the benefit under Title 35, U.S.C. Code, • 120, of any United States applications(s), or • 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application(s) in the manner provided by the first paragraph of Title 35, U.S. Code, • 112, I acknowledge the duty to disclose information material to patentability as defined in Title 37 The Code of Federal Regulations, • 1.56(a) which became available between the filing date of the prior application and the national or PCT international filing date of this application

(Application Serial No.)	(Filing Date)	(STATUS: patented, pending, abandoned)
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(Application Serial No.)	(Filing Date)	(STATUS: patented, pending, abandoned)
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I hereby revoke all previously granted powers of attorney and appoint the following attorneys Robert E. Bushnell, Reg. No. 27,774, Michael D. Parker, Reg. No. 34,973, and Henry M. Zykorie, Reg. No. 27,477, to prosecute this application and to transact all business in the U.S. Patent & Trademark Office connected therewith and with any divisional, continuation, continuation-in-part, reissue or re-examination application, with full power of appointment and with full power to substitute an associate attorney or agent, and to receive all patents which may issue thereon, and request that all correspondence be addressed to

Robert E. Bushnell

Attorney-at-Law

Suite 300, 1522 "K" Street, N.W.

Washington, D.C. 20005-1202

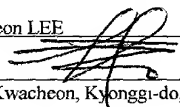
Payor No. 008439

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I HEREBY DECLARE that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under • 1001 of Title 18 U.S. Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon

FULL NAME OF FIRST OR SOLE INVENTOR Yang-Yeon LEE

Citizenship Republic of Korea

Inventor's signature: 
Residence & Post Office Address 503-1201 Jookong Apt, 6 Pyeongyang-dong, Kwacheon, Kyonggi-do, Korea

Date July 6, 2000

FULL NAME OF SECOND JOINT INVENTOR: _____

Citizenship _____

Inventor's signature: _____
Residence & Post Office Address _____

Date: _____

FULL NAME OF THIRD JOINT INVENTOR _____

Citizenship _____

Inventor's signature _____
Residence & Post Office Address _____

Date _____

FULL NAME OF FOURTH JOINT INVENTOR _____

Citizenship _____

Inventor's signature _____
Residence & Post Office Address _____

Date _____